perform the positional alignment process and the pressure bonding process by separate units, for example, the positional alignment device of Fig. 5B and the bonding device of Fig. 5C, respectively, in order to improve the productivity by concurrently performing the positional alignment work and the pressure bonding work when continuously manufacturing, for example, a lot of boards. Fig. 5C shows two bonding devices 8 provided for the purpose of improving the productivity, by which two portions of one circuit board 4 can be concurrently subjected to pressure bonding.

In each of the aforementioned and undermentioned embodiments, the circuit board 4 is provided by a multilayer ceramic board, a glass fabric laminate epoxy board (glass epoxy board), an aramid unwoven fabric board, a glass fabric laminate polyimide resin board, FPC (flexible printed circuit), or an aramid unwoven fabric epoxy board (for example, a resin multilayer board sold with a registered trademark of "ALIVH" produced by Matsushita Electric Industrial Co., Ltd.), or the like.

These boards 4 do not always have a complete plane since warps and undulations are generated due to thermal history, cutting, and processing. Accordingly, as shown in Fig. 5A and Fig. 5B, by locally applying heat and load to the circuit board 4 via the IC chip 1 from the

bonding tool 8 side toward the stage 9 side by means of the bonding tool 8 and the stage 9 each of which the parallelism is controlled so that the parallelism is adjusted to, for example, about 10 μm or less, the warp of the circuit board 4 in the applied portion is corrected.

The IC chip 1 is warped concave about the center of the active surface. By pressurizing the IC chip with a heavy load of not smaller than 20 gf per bump at the time of bonding, the warps and undulations of both the board 4 and the IC chip 1 can be corrected. The warp of the IC chip 1 is generated by an internal stress caused when a thin film is formed on Si in forming the IC chip 1. The quantity of deformation of the bump is about 10 to 25 μm, which becomes tolerated by each bump 3, which adapts itself with the deformation of the bump 3 to the influence of the undulation that appears on the surface from the inner layer copper foil originally owned by the board of this grade.

Thus, a heat of, for example, 140 to 230°C is applied to the anisotropic conductive film sheet 10 located between the IC chip 1 and the circuit board 4 for, for example, about several seconds to 20 seconds in a state in which the warp of the circuit board 4 is corrected, and this anisotropic conductive film sheet 10 is hardened. At this time, the thermosetting resin 6m, which constitutes the anisotropic conductive film sheet 10, flows first and

encapsulates the IC chip 1 up to the edge of the IC chip 1. Moreover, the resin, which is naturally softened at the beginning when heated, generates a fluidity of a flow to the edge as described above. By making the volume of the thermosetting resin 6m greater than the volume of the space between the IC chip 1 and the circuit board 4, the resin flows and leaks out of this space, allowing the encapsulation effect to be produced. Subsequently, the heated bonding tool 8 is moved up, by which the heating source disappears to rapidly reduce the temperatures of the IC chip 1 and the anisotropic conductive film sheet 10. The anisotropic conductive film sheet 10 looses its fluidity, and as shown in Fig. 1F and Fig. 4C, the IC chip 1 is fixed onto the circuit board 4 with the resin 10s that is constituting the anisotropic conductive film sheet 10 and hardened. Moreover, if the circuit board 4 side is heated by a heater 9a of the stage 9 or the like, the temperature of the bonding tool 8 can further be reduced.

With this arrangement, a thermosetting resin mixed with an inorganic filler of a mean particle diameter smaller than the mean diameter of the conductive particles 10a can be used for the anisotropic conductive film sheet 10. Furthermore, by using nickel powder plated with gold as the conductive particles 10a contained in the anisotropic conductive film sheet 10, the connection